

MILL CREEK 2 AND 3 HYDROELECTRIC SYSTEMS,
MILL CREEK 2 SANDBOX
Mill Creek
Yucaipa vicinity
San Bernardino County
California

HAER No. CA-2272-C

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of Interior
1111 Jackson Street
Oakland, California 94607

HISTORIC AMERICAN ENGINEERING RECORD

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Location: The Mill Creek 2 Sandbox (MC 2 Sandbox) is located approximately 800 feet west of the Mill Creek 2 Intake (MC 2 Intake) along Mill Creek with Mountain Home Village on the opposite side, in San Bernardino County, California. (USGS topographic map Yucaipa, Section 8; T. 1S., R. 1W.).

Significance: The Mill Creek 2 Sandbox is one of the key components of the Mill Creek 2 Hydroelectric System (MC 2). The MC 2 Sandbox allows sand and gravel to settle out of the water before traveling to the powerhouse. If this is not done, the abrasiveness of the sandy water would rapidly wear out the water wheel and related equipment. MC 2 is one of the earliest examples of a high-head hydroelectric system within the United States and one of the first commercial three-phase alternating current stations in California. Three-phase alternating later became the industry standard.

Description: Located 800 feet from the MC 2 Intake, the MC 2 Sandbox, which is a 22-foot (east to west) by 50-foot concrete structure. Water from the MC 2 Intake combined with the water from Mill Creek, Mountain Home Creek and Monkeyface Falls flows through 18-inch concrete and steel pipes collecting in the sandbox. The MC 2 Sandbox consists of five settling basins with concrete cross walls that vary in depth from five to eight feet.⁵⁶ Each basin is V-shaped in order to help collect the sand, which is then sluiced through gates at the lower end of the sandbox. The flume passes along the upper side and the water enters the five basins, passing through them via wide crested weirs. Due to the large cross section, the water loses velocity, allowing the sand to collect at the bottom of the basins before the water continues to the pipe line. An additional sixth basin, smaller than the other five, collects water that is poured into the sandbox via a steel pipe located at the north end of the east side of the structure. Six drain gates line the north edge of the sandbox, one for each basin. The water then leaves the west end of the sandbox through a four-foot wide concrete section that links to concrete pipes below.

History: The MC 2 Sandbox was constructed as part of the Mill Creek 2 Hydroelectric System. The MC 2 system was constructed between 1889 and 1899 by the Redlands Electric Light and Power Company, later absorbed by Edison Electric Company of Los Angeles in 1901. MC 2 has not been in operation since 1992, when it was damaged in a flood. Today MC 2 is owned by Southern California Edison. Please see the Historic Context section in the general Historic American Engineering Record for the Mill Creek 2 and 3 Hydroelectric Systems (HAER No. CA-2272) for additional information.

Sources:

Fowler, Frederick Hall. *Hydroelectric Power Systems of California and Their Extensions into Oregon and Nevada, Water-Supply Paper 493*. Washington, D.C.: Government Printing Office, 1923.

⁵⁶ Frederick Hall Fowler, *Hydroelectric Power Systems of California and Their Extensions into Oregon and Nevada, Water-Supply Paper 493*, Washington, D. C.: Government Printing Office, 1923, 603.

White, David R. M. "Cultural Resource Management Plan for the Southern California Edison Company Mill Creek Hydroelectric Project (FERC Project No. 1934) San Bernardino County, California," June 1993.

Low, George P. "The Generating, Transmission and Distribution Systems of The Edison Electric Company of Los Angeles, Cal.," *The Journal of Electricity, Power and Gas*. vol. XIII, no. 1. January, 1903.

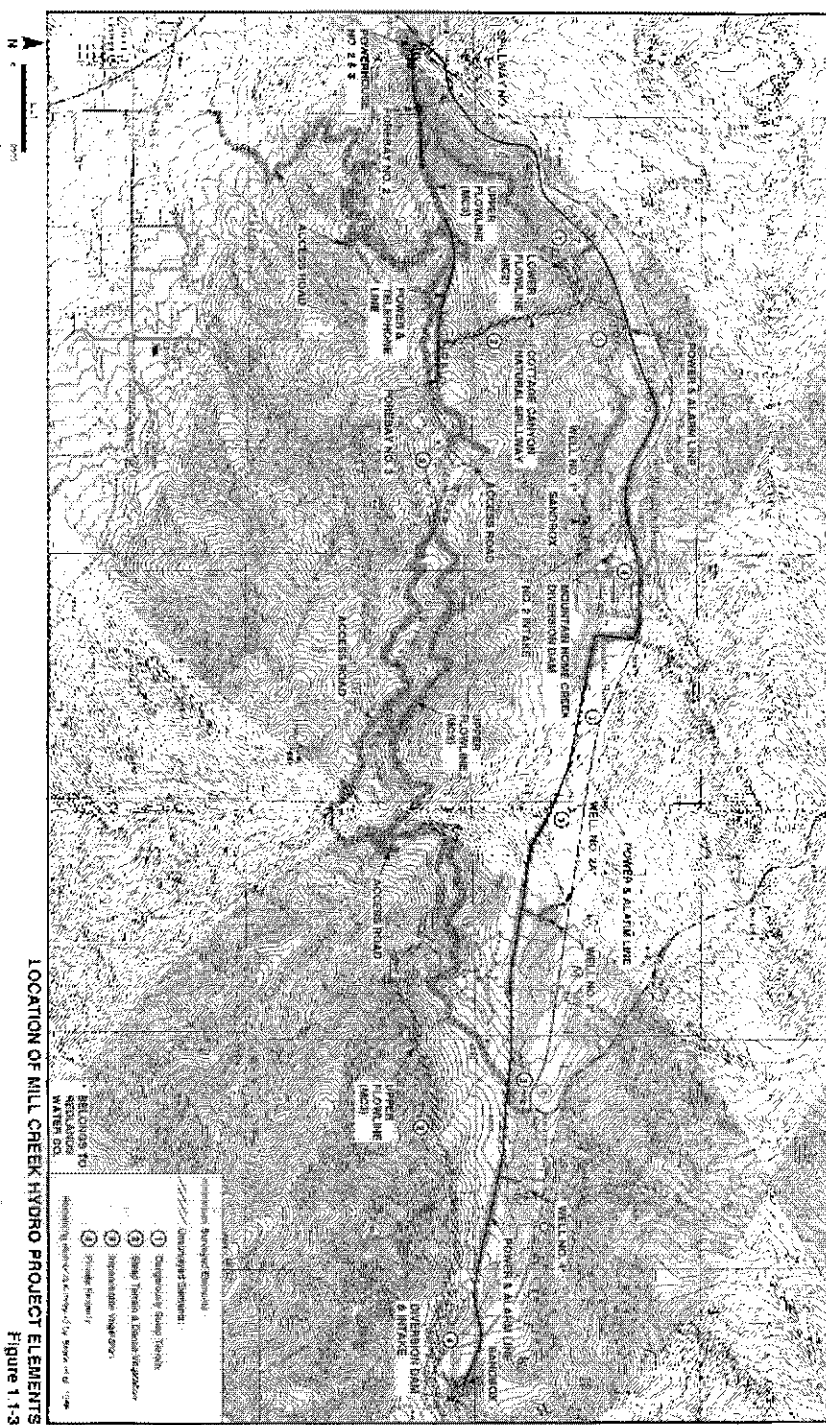
"Means Much to Redlands: Big Light and Power Deal Closed," *Los Angeles Times*. May 25, 1901, 8.

"Redlands Electric Light & Power Co., Edison Electric Co. of Los Angeles, Mill Creek Powerhouses," *National Register of Historic Places Inventory – Nomination Form*, April 30, 1985, item number 7, 10.

Historian: Christeen Taniguchi, Senior Architectural Historian, and Nicole Collum, Architectural Historian II, Galvin Preservation Associates, 1611 S. Pacific Coast Highway, #104, Redondo Beach, CA 90277, 2008-2009.

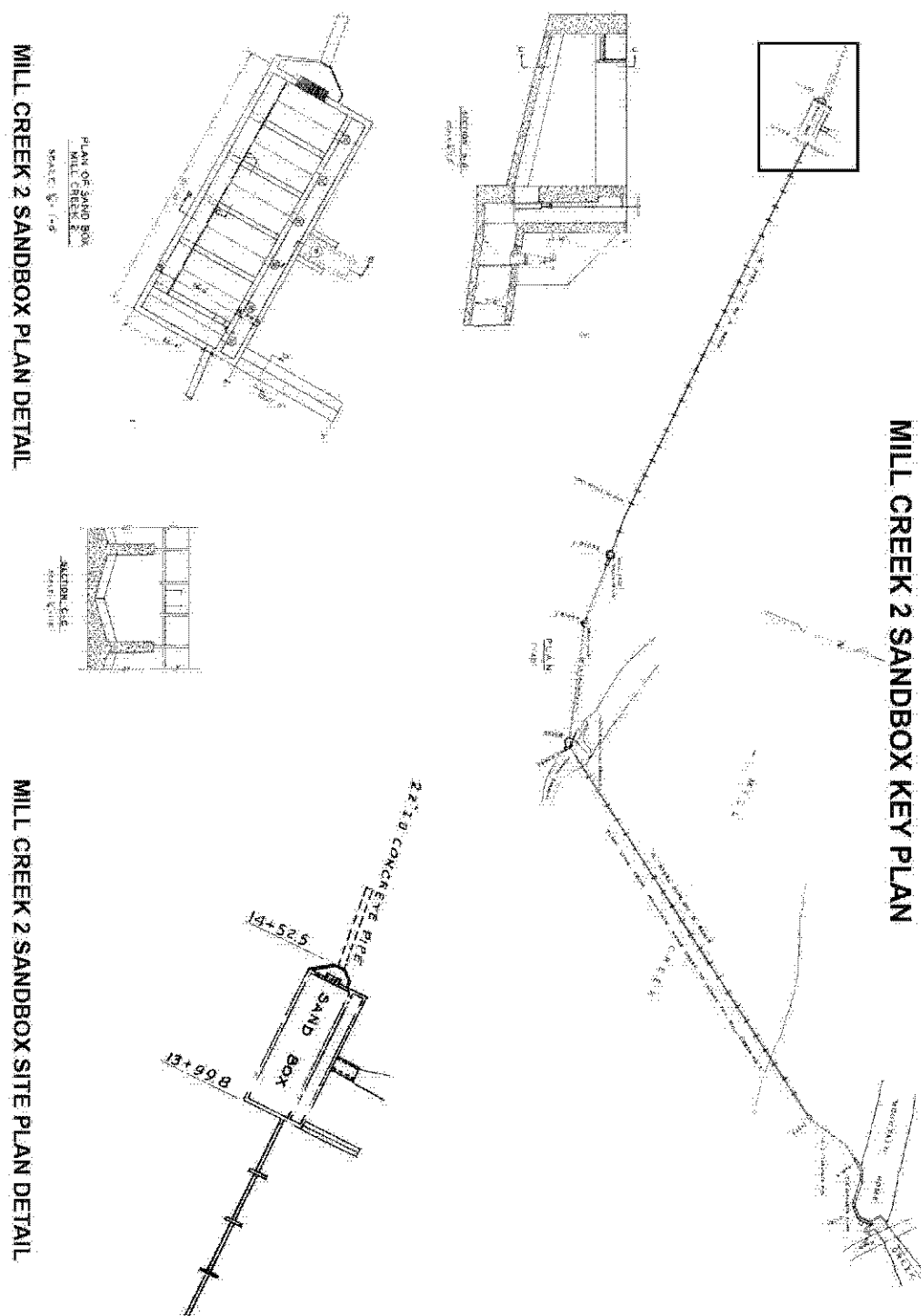
Project Information: MC 2 has not operated since 1992 when it was damaged during floods. It was not, however, decommissioned. The Southern California Edison Company, in conjunction with the San Bernardino National Forest, the agency that owns the property, proposes to formally decommission the facility. This process will include filling the sandbox and forebay with slurry, and removing the metal features. Although MC 3 is still in operation, it is also being recorded as part of this project because of the system's close association with MC 2.

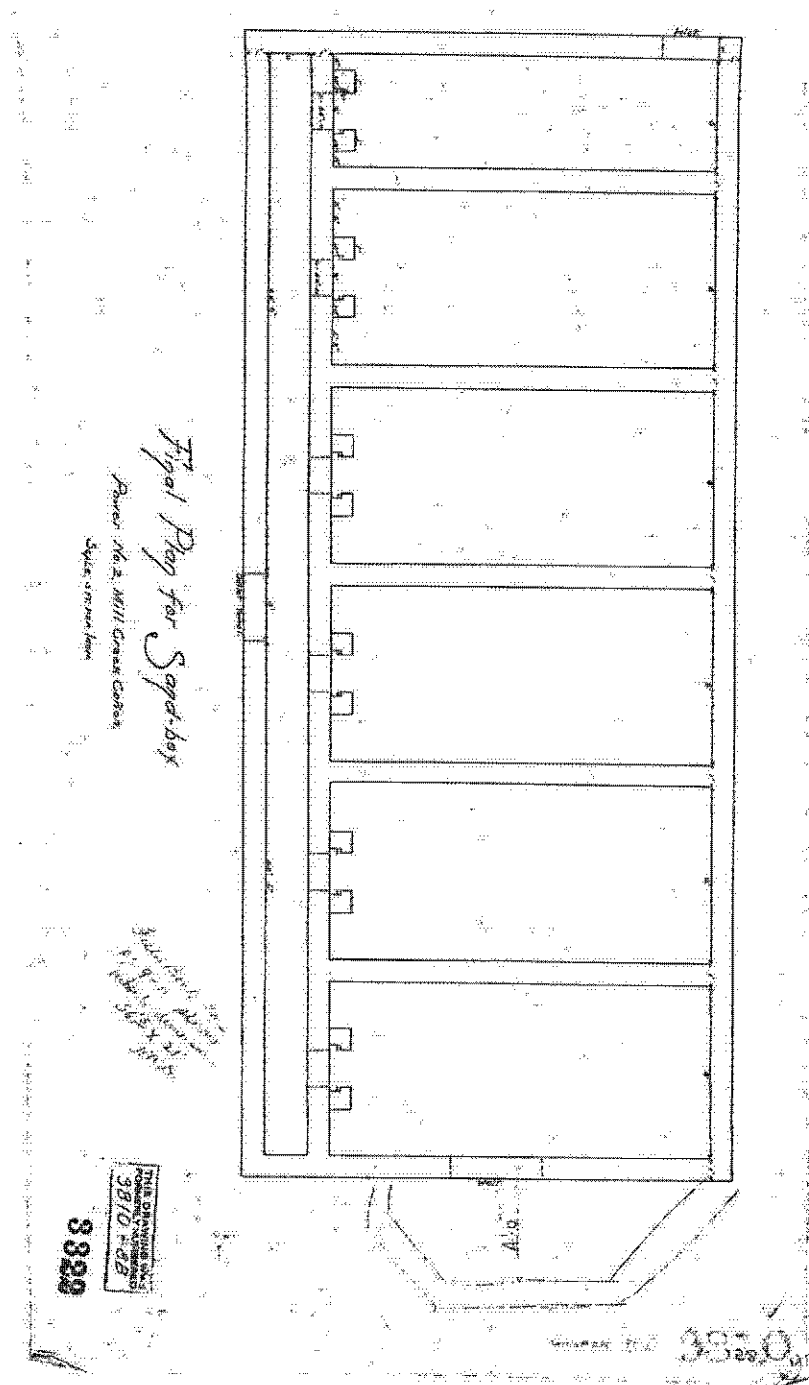
**MILL CREEK 2 AND 3 HYDROELECTRIC SYSTEMS,
MILL CREEK 2 SANDBOX
HAER No. CA-2272-C
(Page 3)**



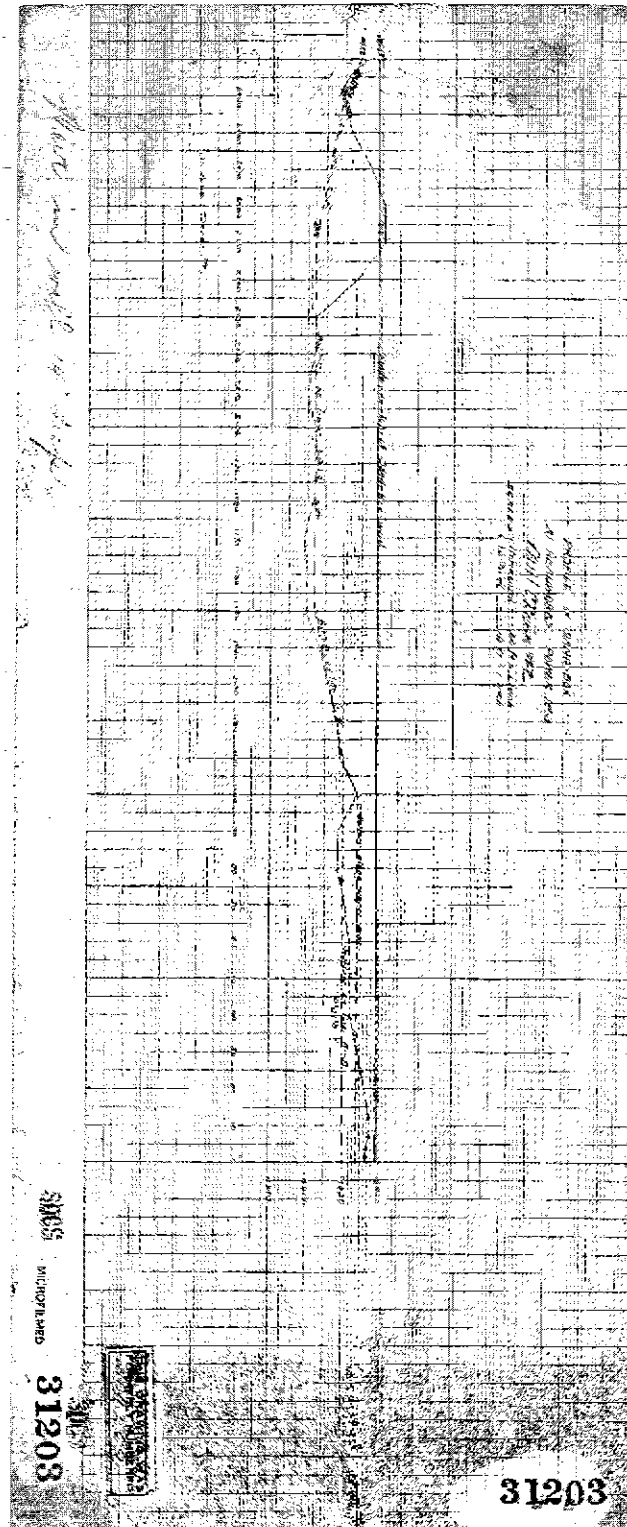
Location of Mill Creek Hydro Project Elements. (Map Courtesy of Southern California Edison)

**MILL CREEK 2 AND 3 HYDROELECTRIC SYSTEMS,
MILL CREEK 2 SANDBOX
HAER No. CA-2272-C
(Page 4)**





Plan of Mill Creek No. 2 Sandbox. (Plan Courtesy of Southern California Edison).



Mill Creek 2 Sandbox Profile Plan. (Courtesy of Southern California Edison).